

SPEECHES DELIVERED  
AT A DINNER HELD IN  
UNIVERSITY COLLEGE, LONDON  
IN HONOUR  
OF  
PROFESSOR KARL PEARSON  
23 APRIL  
1934

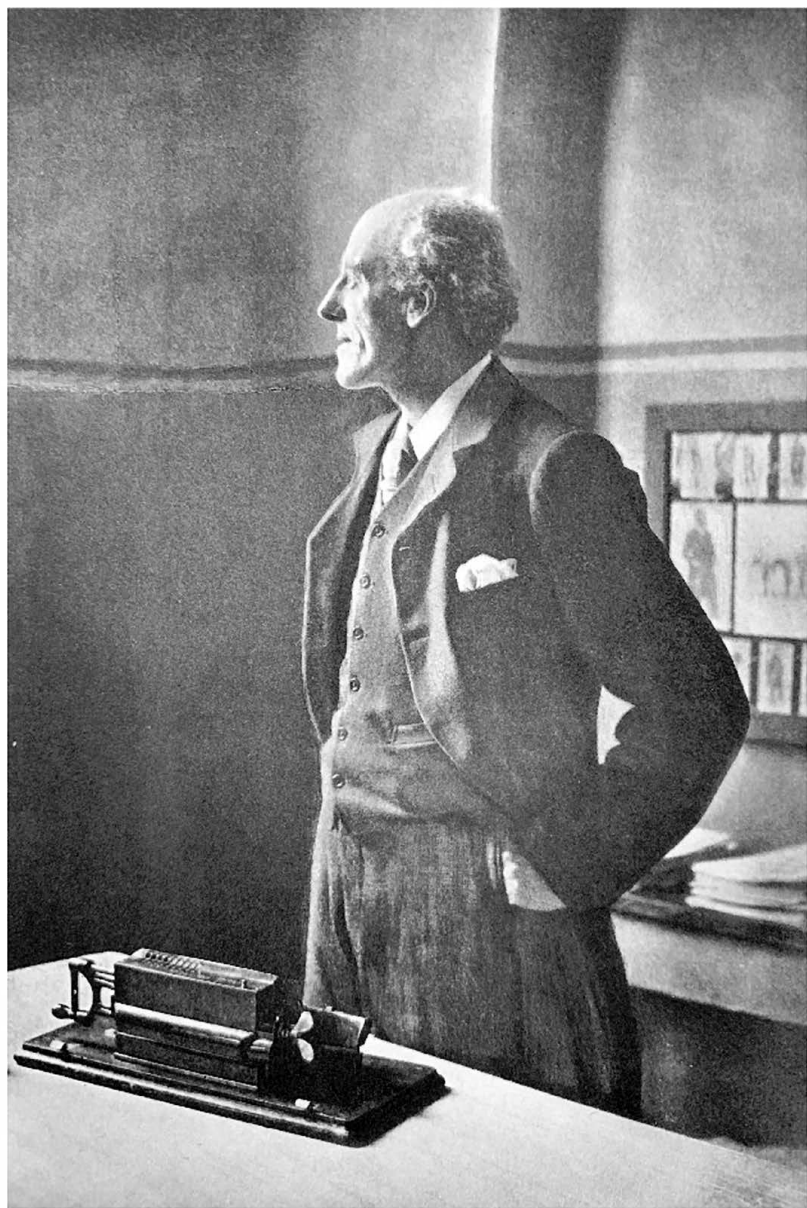
UCL Legacies of Eugenics Project

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# UCL Legacies of Eugenics Project

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*Each change of many-colour'd life he drew,  
Exhausted worlds, and then imagin'd new;  
Existence saw him spurn her bounded reign,  
And panting Time toil'd after him in vain.*

SAMUEL JOHNSON

On 23rd April, 1934, a dinner was held at University College, London, in honour of KARL PEARSON, at which many past students, colleagues and friends were present. A Brunsviga calculating machine, a portrait plaque, a cheque and a book containing the signatures of all subscribers were presented to him by the VICE-CHANCELLOR of the UNIVERSITY of LONDON, and it has seemed desirable to put on record the speeches made on this occasion. For the production of this little booklet subscribers are indebted to the generosity and craftsmanship of the Cambridge University Press and its Printer, who for so many years have been associated with the launching of K.P.'s contributions to scientific research.



## THE VICE-CHANCELLOR

Prof. L. N. G. Filon

*Ladies and Gentlemen,*

IT IS NOW my pleasant duty to propose the toast of the Guest whom we are happy and proud to honour this evening. To myself it is not merely a duty, but a privilege, which I value most highly. As one of the oldest pupils of Karl Pearson—may I refer to him, as all of us who have sat at his feet think of him affectionately, as K.P.?—and likewise as his unworthy successor in that Chair of Applied Mathematics, where he maintained the great traditions of his predecessor, William Kingdon Clifford, I count it a fortunate coincidence that it has been given to me, during my period of office as Vice-Chancellor, to be the interpreter of the feelings of admiration which the University as a whole entertains for one who has, for forty-nine years, been one of the outstanding figures in our College and our University.

Indeed, he is so well known to all of us here, who have, at some time or other, whether as his pupils, his colleagues, or as fellow-workers in the same fields all over the world, come under the influence of his personality and been inspired by his example, that anything I can say to-night about his achievements may well appear superfluous.

And yet I feel that very few of us can realise at all fully how many-sided have been these achievements. His work during the last half-century would have easily filled the lives of three eminent

scientific men. He came to University College, in 1884, with a great mathematical reputation, and it is as a mathematician—and especially in the Theories of Elasticity and of Probability and Statistics—that some of us know him best. His great work on the History of Elasticity—originally started by the late Isaac Todhunter, but of which K.P. was responsible for the major part—remains to this day the great classic of the subject. Quite early, however, in his career as Professor of Applied Mathematics, he became attracted, through his friendship with Francis Galton and Weldon, by the problems of Biology, and he boldly attacked the stupendous task of applying systematically to such problems the methods of the mathematical theory of probabilities, a task which eventually developed into a life-work, and ultimately absorbed all his energies.

As we all know, he achieved in this field such an amazing success that he may justly be said to have created a new branch of science—foreshadowed by Francis Galton—that of Mathematical Biology. The first of his classical series of papers, “Contributions to the Mathematical Theory of Evolution”, was published in the *Philosophical Transactions* in 1894, and from that day to this, either personally, or through inspired co-workers, he has built up, step by step, the monumental edifice of this new science.

In 1911 the will of Francis Galton made possible the endowment of the new Galton Chair of Eugenics and the better housing of the Galton and Biometric Laboratories, and K.P. relinquished the Goldsmid Chair of Applied Mathematics to become the first Galton Professor, a post which he held until last September, when, to the great disappointment of all his colleagues and pupils, he decided to retire from active service—though indeed he is still as active as ever in the field of research, and our fervent wish to-night, for himself and for British science, is that this



vigorous activity may happily continue for many years yet. Indeed, to those who know him, an idle K.P. is an unthinkable proposition.

But it would be a profound mistake to think of our Guest of honour this evening merely as a mathematician. Few men—certainly few mathematicians—have had such wide interests and shown ability in so many fields.

In his youth, like Father William, he studied the law—and, knowing well K.P.'s fighting spirit, may I venture to continue, with apologies to the shade of Lewis Carroll?

—and argued each point with his staff;  
And the muscular strength that it gave to his jaw,  
Has lasted the rest of his life,

which reminds me of the manner in which K.P. and I came to write our first joint paper, on the Probable Errors of Frequency Constants.

I had then just taken my degree, and K.P. had taken me upon his staff as Demonstrator, at what then seemed to me the princely salary of £40 a year. Nowadays young people expect at least £250 a year in the same circumstances, but then they do not get the stimulus of a Karl Pearson, which was worth more to me than the difference. K.P. lectured to us on the Mathematical Theory of Statistics, and on one occasion wrote down a certain integral as zero, which it should have been on an accepted general principle. Unfortunately I have always been one of those wrong-headed persons who refuse to accept the statements of Professors, unless I can verify them for myself. After much labour, I actually arrived at the value of the integral directly—and it was nothing like zero. I took this result to K.P., and then, if I may say so, the fun began. The battle lasted, I think, about a week, but in the end I succeeded in convincing Professor Pearson. It was typical of K.P. that, the moment he was really

convinced, he saw the full consequences of the result, proceeded at once to build up a new theory (which involved scrapping some previously published results) and generously associated me with himself in the resulting paper. I often wonder now, with my much enlarged experience of the Professorial class, how many Professors would have taken an error pointed out by a student in quite that spirit. I *hope* all of them would have done, but I wonder. It always struck me as a magnificent example of snatching victory out of defeat.

There are also two delightful volumes of early essays, *The Chances of Death* and *The Ethic of Freethought* (the latter unfortunately out of print), which deal with various social and philosophical problems. K.P. was never one to miss the wood for the trees, and his knowledge of the Philosophy and History of Science is, I think, almost unrivalled. His *Grammar of Science* still remains, to my mind, the best statement I know of fundamental principles, and would well repay study by some of our modern Universe-builders.

In the midst of all these activities he found time to interest himself in the vexed question of the University of London, and in 1892 published a book—now I believe very scarce, but of which I possess a copy—entitled: *The New University for London; a Guide to its History, and a Criticism of its Defects*. Those who know the author's views will have no fear that the last part of the subject indicated suffered from inadequacy of treatment.

It is characteristic of him, too, that everything he touched multiplied, so to speak, under his hand. His original Chair of Applied Mathematics gave birth to two Departments, one of which still retains its old title, and the other became the Department of Applied Statistics and Eugenics, which again has split up, amoeba-like, into two Departments. To him also is due the initiation of the Astronomical Observatories in the College and

the institution of an Astronomical Degree in the University. I well remember clambering about with him, thirty-five years ago, on the roof of the College, searching for a suitable site, which we ultimately found in the main quadrangle.

And now, before concluding, I want to take this opportunity of expressing my gratitude to K.P.—quite independently of all the personal help and encouragement he gave me (as indeed to all those who worked with him) in the past—for two lessons of vital importance that I learned from him. I have never thanked him for them yet, because many years elapsed before I realised their true inwardness. I mention them here and now, as I feel they throw some light on the spirit in which he worked.

The first was that no physical theory can ever be *proved* by mathematics, and that experimental verifications, however numerous, at most give a balance of probabilities.

The second was that no mathematical calculation can be of practical value until its results are actually translated into *numbers*, which can be compared with observation. This lesson I learnt through many long hours turning the handle of a Brunsviga; but it was well worth it.

Ladies and Gentlemen, I must apologise for inflicting such a long speech upon you. Let my excuse be my subject; I have not said half of what is in my heart about my old master.

I propose to you the toast of “Karl Pearson” and I will now call upon Mr Udny Yule to speak in support.



## Mr G. Udny Yule

*Mr Vice-Chancellor, Ladies and Gentlemen,*

WE HAVE met together this evening to endeavour to express something of what we owe to Professor Karl Pearson, something of what we feel on looking back through the years to the time when we first came under his influence. But for no two of us can our debts or our memories be exactly the same, though they may have much in common. And each of us only knows his own. Please forgive me then, if I seem to speak too much of my own memories and my own debt: I can only speak of what I know.

I first came under K.P. when as a boy of sixteen in a nice Eton collar I was, after some doubt as to whether I really was not too young, admitted to University College as an engineering student in October 1887. He was then, of course, Professor of Applied Mathematics and Mechanics, and as such not only lectured to students who were entering for University degrees, but also lectured to and held drawing classes for engineering students on graphic methods applied to mechanics, to the determination of stresses in structures and allied problems. There was, I believe, no similar course held in any engineering school at that time, except possibly by Professor Henrici at the Central Technical College. Characteristically, Professor Pearson introduced and developed methods then only available to the student in foreign works. The luminous clarity of his exposition, his own keen interest in his subject and his students, stand out in my memory

of those far-off days. Of my other teachers at the time, so many have been reaped in the inevitable harvest of the years—Sir Alexander Kennedy, Professor Carey Foster, Sir William Ramsay, Professor Bonney, Professor M. J. M. Hill: it is surely additional matter for rejoicing that K.P. is still active and vigorous amongst us—long may he remain so!

In 1893 I rejoined Professor Pearson as Demonstrator, when the new Engineering Laboratories in the south-west wing had just been opened, though not completed in their present form. My salary was more magnificent than that of the Vice-Chancellor, for I received no less than £75 a year. My official work was mainly concerned with engineering students, but otherwise I gave the Professor general assistance, and hence came my introduction to statistical method. For 1893, as the speech of the Vice-Chancellor reminded you, was an epoch-making date in the theory of statistics. It was the date of completion and communication to the Royal Society of Professor Pearson's first statistical paper under the general title "Contributions to the Mathematical Theory of Evolution"—the *Philosophical Transactions* paper on the dissection of compound normal curves, and the forerunner of the remarkable series of memoirs under the same general title published in the *Philosophical Transactions* or as *Drapers' Company Research Memoirs*. Before I had to leave Professor Pearson in 1899, in order to earn something more like a living wage than could then be afforded by University College even to an Assistant Professor—£150 a year I think—the modern Pearsonian *corpus* of statistical theory was fairly started into life. I shall always regard it as my greatest good fortune thus to have been associated with Professor Pearson's early work in statistics, to have heard those first lectures in which he often developed the new ideas that subsequently took shape in memoirs, and to have been infected by his enthusiasm—for he gave me my real work

for life, and no man can owe more to another than that. The memories of those six years are some of the happiest that I have: memories not of work alone, but of talk and tea and holidays. Of a holiday in Norway, when the North Sea violently disagreed with both of us. Of a holiday in the Lakes, when I seem to remember reading in his company a book of Balfour's, I think it must have been the *Foundations of Belief*, to some unbelieving cows in a Keswick field. Of a holiday in Yorkshire, when Dr Sigrid Pearson was a very small girl, and Dr Egon, if he existed at all—I am not very sure of the order of these memories—must have been an infinitesimal; and of the way in which Professor Pearson, there amongst his own people, got the farmers to produce for him whole washbaskets full of the ancient deeds relating to their farms, most of which the old Vicar of the parish, Canon Atkinson, though an enthusiastic antiquarian, had never seen. (And he must have been a remarkable man, Canon Atkinson, for he described the shape of his parish, in a book he wrote about it, as being “a five-sided trapezium”.) And I remember one year, the date of which I can fix—it must have been 1895—when while supplementing my income by coaching one of our students in a big house in Scotland in the long vacation, I received a postcard from Professor Pearson with nothing written on it but the brief reference “Isaiah ix. 6”.

The accommodation available in those old days seems the scantiest when you look at the present palatial halls. There was no working room except the Professor's private room and a long slip of a room behind the lecture room which was turned into an instrument room, and housed a Coradi coordinatograph, integrator, and pantograph—and not much else so far as I can recall. The purchase of the first Brunsviga was a great excitement: they were noisy things, those early Brunsvigas, but cheap, efficient and sturdy: mine, bought in September 1895 for what

seems now the incredible sum of £12. 12s. *od.*, is still quite sound and was only recently returned from use by a psychological student who was glad to borrow it! And I still remember Professor Weldon's look of puzzled astonishment at lunch, when Professor Pearson informed him he had just got "an adder"—and had to explain. It was, I think, an early form of Comptometer, sent on approval but not approved.

Is it not astonishing to look back to those days and then to survey the output of the following years?—the twenty-five (but really twenty-six) volumes of *Biometrika* which began its successful career in October 1901, the mass of Drapers' Company Research Memoirs, the Studies in National Deterioration, the Questions of the Day and of the Fray—there has been plenty of "The Fray"!—the Eugenics Laboratory Publications, the *Tables for Statisticians and Biometricians*, and the *Annals of Eugenics*—and to consider how great a part, aside altogether from his editorial labours, Professor Pearson's own individual work has taken in it all? How is it that he has not worn himself out completely? It must surely speak well for the hereditary vigour of the stock!

But we who are statisticians, *as* statisticians, owe but a share in the general debt to Professor Pearson. Of his teaching to engineering students I have already spoken. He was responsible for completing and editing Todhunter's *History of the Theory of Elasticity*, on the researches of de Saint-Venant, published 1886–1893. The Technical Series of memoirs in the Biometric Laboratory Publications, with their studies on crane-hooks, arches and dams, as well as the work done in the laboratory during the war, witness to his continued interest in engineering problems. We have here, so to speak, a second Professor Pearson. Or should it not be the first?

No, not the first, even if an earlier Pearson than the statistician: there seems to be a number of Pearsons! I am not sure what was



actually his earliest publication in book form. But, after prowling through the catalogue of the University Library at Cambridge and then turning for verification to Halkett and Laing's *Dictionary of Anonymous and Pseudonymous Literature* and to Bartholomew's *List of Cambridge Books*, I conclude we have to thank him for *The Trinity: a Nineteenth Century Passion Play* in verse, published anonymously through Elijah Johnson in 1882, the year in which he took his M.A.: that was a most exciting find! And how many of those present know *Die Frönica* (1887), a most interesting study of the Veronica portraits of Christ? More, probably, know and have been influenced by the author of *The Ethic of Freethought* (1st ed. 1883). With *The Grammar of Science* (1892 and later editions), which exhibits so well the logic of his thought and the clearness of his exposition, we are getting on to more familiar ground: and how many have not enjoyed that amazingly varied collection of essays on death, roulette, sociology and folklore published under the title *The Chances of Death and other Studies in Evolution* (1st ed. 1887)? Finally, we have *The Life of Francis Galton*. Surely, surely, the labour devoted to that great Life, that biography which is at once so monumental and so absorbing, is the finest tribute that could have been paid by the first holder of the Galton Professorship to the honoured and beloved Founder of the Chair.

I said just now that almost there seemed to be a number of Professor Pearsons. But we all know that there is but one! We all, Professor Pearson, owe to you more than we can well express. The gifts we give, to use the phrase of the day, can be but token payments. We rejoice that your name will still continue to be associated with the teaching of statistics within these walls. We hope that you have still before you happy years of peaceful work and that your hours of leisure may sometimes be coloured by pleasant memories of your old pupils.



## Prof. Harald Westergaard

*Ladies and Gentlemen,*

IT GOES without saying that I am extremely happy to have the opportunity of speaking this evening in honour of the author of *The Chances of Death*, the friend and biographer of Francis Galton, the founder of *Biometrika*, the untiring explorer of the vast field of symmetric and asymmetric frequency curves. Quite naturally an expression of esteem, of admiration and of friendship should be heard from abroad on this occasion, as well as from England. What I have to say, however, cannot be looked upon as a message from abroad, for I cannot help considering Professor Pearson as my countryman. I have not seen his pedigree, but his name sounds Scandinavian, and I guess he is a descendant of the old Vikings, brave and fearless as they were, who came across the sea in their open boats, always ready to draw their swords to defend what was dear to them, till at last they settled in England, as quiet citizens, but still with the Viking-blood in their veins. May I add, in parenthesis, that Mr Yule too is apparently of Scandinavian origin. His name is found as a very frequent family name in certain parts of Denmark, even though spelt a little differently.

But if I cannot claim to speak on behalf of the world outside Professor Pearson's country, I feel sure that numbers of scientists abroad will join me. As an example, Mr Corradi Gini, the Italian statistician, asked me—a few days ago—to remember him most kindly to Professor Pearson.

But let me try to widen the horizon, to a large and wonderful country from which voices of sympathy and friendship will be heard. It is not a fairy land, only existing in our imagination; it has a real existence, though much richer and much more wonderful than anything you can imagine. It is the World of Science, the Kingdom of Truth. Not everybody can get admission to that country. The conditions are rather severe. In order to become a citizen you must, above all, be a true scholar, you must love the truth. You must always be ready to fight with difficulties and to take up any problem which meets you on your way. You must have a critical sense, first of all constantly criticising yourself. You must always be anxious to revise your solution of a problem, over and over again, till you are quite sure that it is in complete harmony with all the existing conditions. It may give pain, for if you love the truth you must be willing to acknowledge your own mistakes, if you have been on a wrong track, glad to find that others have solved the problem with which you have struggled in vain, glad to know that the truth was found at last, even though you did not find it yourself. You must never cease looking forward to the altar where the eternal fire of truth is burning.

These are the conditions. And it will add to your success as a citizen in this wonderful Kingdom, if you have a persevering mind, as a man whom I once asked if he never took holidays, if he never gotrest. He replied simply: "I getrest by change of labour".

Ladies and Gentlemen! Do you guess whom I mean, and do you think on the whole that I have characterised Professor Pearson correctly? If this is the case, will you listen to voices of approval coming from the Wonderland, the Kingdom of Truth, of which Professor Pearson is a worthy citizen? And will you join me in thanking him for a long life's work, wishing him happiness and blessing in the years yet to come?

*Professor M. Greenwood said:*

USUALLY there is a touch of sadness in celebrations such as this, because they suggest retirement and old age. This is an unusual occasion, for we all know that the Professor never will retire from active work and never could be old. The late John Brownlee drew a distinction between high age and old age and, at any rate to the Professor's pupils, it is a distinction easily intelligible. We can, therefore, enjoy the pleasure of thanking the Professor unalloyed with sadness.

My recollections do not go quite so far back as those of the Vice-Chancellor and Mr Yule, but it is more than thirty-four years since the Professor came into my life as the Grammarian and nearly thirty years since I was his pupil in this College. Helmholtz says somewhere that contact with a great teacher alters a man's whole scale of values, permanently. I have worked under two great masters, Leonard Hill and Karl Pearson. Their fields of work and their philosophies were different, but each had that priceless gift of which Helmholtz was thinking, the power to fire the enthusiasm of a lad, to make him realise, once and for ever, that scientific research, undertaken not for some petty, material end, but because

right is right, to follow right

Were wisdom in the scorn of consequence.

is the greatest of joys. Most of us have faltered in the quest, all of us have made mistakes, have fallen far below the ideal the Professor set before us. But none of us has quite lost sight of the glorious vision he showed us in our youth or can ever think of him without gratitude and affection.

Therefore when I read, as I am middle-aged enough to do,

the writings of Robert Browning, there are some lines which always bring before me the memory not of the great Poet, whom I never saw, but of the great Professor who has meant so much to me. The lines are:

What had I on earth to do  
With the slothful, with the mawkish, the unmanly?  
Like the aimless, helpless, hopeless, did I drivell  
Being—Who?  
One who never turned his back but marched breast-forward,  
Never doubted clouds would break,  
Never dreamed, though right were worsted, wrong would triumph,  
Held we fall to rise, are baffled to fight better,  
Sleep to wake.

## Prof. Karl Pearson's reply

*Mr Vice-Chancellor, Ladies and Gentlemen,*

EVER SINCE as a "fresher" in Cambridge, after taking a Sunday country walk, I turned suddenly round a corner and met full-face—myself hatless and gownless—the Vice-Chancellor, the Proctors, the Esquire Bedell and the attendant bull-dogs with the chained statute books of the University, all gorgeously appparelled, on their way to afternoon service, and was pounced on by one of the bull-dogs to the tune of 6s. 8d., I have felt a deep feeling of reverence for Vice-Chancellors. Now, Sir, although I have seen you pass from the days of your slim boyhood and step by step attain your present greatness, yet I still hesitate to correct your mistakes, mistakes repeated I fear by later speakers. You are, Sir, as all the world acknowledges, a leader in council and a great mathematician, but alas, you are not a geneticist! Had you been such, you would not have attributed to *me* all the imposing achievements which only my knowledge that you were a Vice-Chancellor—and speaking after dinner—prevented me from continually and loudly disclaiming. I can, Sir, only set your genetics right by being autobiographical. From our stock we each one of us obtain our physical and mental faculties. They arise from no merit of our own, and their full development depends mostly on the friends we ourselves acquire or on the men who cultivate our friendship.

From my Father I inherited some fraction of his power for hard work. During the legal terms, winter and summer, he was

up at 4 a.m. to read his briefs and prepare his speeches for Court. Home at 7 p.m., dinner followed and bed at 9 p.m. Only in the vacations did we really see him; then he was shooting, fishing, sailing with a like energy which astonished me even as an active boy. On my Mother's side I am also descended from Yorkshire folk, formerly termed the "mad" Bethels, and from another Yorkshire family, the roaming Whartons. Put into me a combination of those characteristics—a capacity for hard work and a capacity for roving into other people's preserves—and you have an explanation of my life. Its doings are *not due to myself*, but arise from the factors contributed to my make-up by my ancestry.

Now mark the result of this germinal mixture. In Cambridge I studied Mathematics under Routh, Stokes, Cayley and Clerk Maxwell—but wrote papers on Spinoza. In Heidelberg I studied Physics under Quincke, but also Metaphysics under Kuno Fischer. In Berlin I studied Roman Law under Bruns and Mommsen, but attended the lectures of Du Bois Reymond on Darwinism. Back at Cambridge I worked in the engineering shops but drew up the schedule in Mittel- and Althochdeutsch for the Medieval Languages Tripos. Coming to London, I read in Chambers in Lincoln's Inn, drawing up bills of sale, and was called to the Bar, but varied legal studies by lecturing on Heat at Barnes, on Martin Luther at Hampstead and on Lassalle and Marx on Sundays at revolutionary clubs round Soho. Indeed, I contributed to the Socialist Song Book hymns which I believe are still chanted. Then Professor Drew fell ill and I took his work at King's College as a temporary job in 1883, because I knew his son. Next, Professor Rowe of University College wanted a *locum tenens* and I came to University College and lectured on pure mathematics, dishing up a secular reflex of the choice herbs of my High Priest, Cayley! Then Professor Beesley, just because I



had lectured to revolutionary clubs, Professor Croom Robertson, just because I had written on Maimonides in his Journal *Mind*, Professor Alexander Williamson, just because I had published a memoir on Atoms, and Professor Henry Morley, just because I had attended and criticised lectures of his on the Lake Poets, pressed me to be a candidate for the Chair of *Mathematics*! Wisely the College selected a better man. I was not disappointed, because I had no great desire to leave the Bar—but then I came across one of the greatest science professors of that day, Alexander Kennedy. He and I shared the same lecture theatre and my Cambridge workshop experience led me frequently into his laboratory, the more so as I had taken on the editing of a *History of the Theory of Elasticity and Strength of Materials*. It was Kennedy who really persuaded me to give up Law and return to Mathematics, and finally landed me in Clifford's Chair of Applied Mathematics at University College. But that could not and did not stop the tendency to roam—if the tit might quote what applies to the eagle—"voyaging for aye through strange seas of thought alone". I really did put hard work into what I was doing, but the tendency to trespass into many fields, notwithstanding hard work, was fatal. Luckily for me I came across two wise old men in those my Wanderjahre—I refer to Henry Bradshaw and Francis Galton.

Bradshaw I had known in my undergraduate days. He was the ideal librarian but something greater—the guide of the young and foolish. After my return from Germany, during 1880 to 1886 his influence as a scholar on me grew greater and greater. His visits to my chambers in the Inner Temple and our joint visits to the Long Room of the British Museum were epochs. He did not directly teach me to concentrate, he was willing like a good librarian to accompany me into any field, but he showed me what the essentials of true workmanship must be. The

following words always come to my mind when I think of Henry Bradshaw:

The song I sang, old Languet had me taught:  
Languet the shepherd best swift Istar knew,  
For clerkly reed, and hating what is naught,  
For faithful heart, clean hands and mouth as true.  
With his sweet skill my skillless youth he drew  
To have a feeling taste of Him that sits  
Beyond the Heavens, far more beyond our wits.

Sidney's *Arcadia*.

Though Bradshaw died in 1886, I still ask of every bit of work I do "Would Bradshaw have mocked playfully at the way I have done this?"

After Bradshaw came Francis Galton. In 1889 he published his *Natural Inheritance*. In the Introduction to that book he writes:

This part of the inquiry may be said to run along a road on a high level, that affords wide views in unexpected directions, and from which easy descents may be made to totally different goals to those we have now to reach.

"Road on a high level", "wide views in unexpected directions", "easy descents to totally different goals"—here was a field for an adventurous roamer! I felt like a buccaneer of Drake's days—one of the order of men "not quite pirates, but with decidedly piratical tendencies", as the dictionary has it! I interpreted that sentence of Galton to mean that there was a category broader than causation, namely correlation, of which causation was only the limit, and that this new conception of correlation brought psychology, anthropology, medicine and sociology in large parts into the field of mathematical treatment. It was Galton who first freed me from the prejudice that sound mathematics could only be applied to natural phenomena under the category of causation. Here for the first time was a possibility—I will not

say a certainty of reaching knowledge—as valid as physical knowledge was then thought to be—in the field of living forms and above all in the field of human conduct.

Then Weldon succeeded Ray Lankester and brought new inspiration, but alas, left us too soon for Oxford! I sent the word “Biometry” to Oxford. The Royal Society Council having passed a resolution that mathematics and biology should not be mixed, *Biometrika* was founded with Galton as consultant and Weldon and myself as joint editors. Buccaneer expeditions into many fields followed; fights took place on many seas, but whether we had right or wrong, whether we lost or won, we did produce some effect. The climax culminated in Galton’s preaching of Eugenics, and his foundation of the Eugenics Professorship. Did I say “culmination”? No, that lies rather in the future, perhaps with Reichskanzler Hitler and his proposals to regenerate the German people. In Germany a vast experiment is in hand, and some of you may live to see its results. If it fails it will not be for want of enthusiasm, but rather because the Germans are only just starting the study of mathematical statistics in the modern sense!

I have endeavoured to correct our Chairman’s genetics by telling you briefly, but I hope with sufficient clarity, how my inherited characteristics were turned by two wise old men into a possibly useful channel. But even if a tenth of what you, Sir, have attributed to me were true—and it is not—I could not have accomplished anything at all without two great aids—the first, the help through more than forty years of devoted and loyal colleagues, who grasped that the whole work of the laboratories—Biometric and Eugenic—was *cooperative* work, that a paper belonged to a laboratory and not to an individual, and secondly, the help, too sacred to be more than shadowed on an occasion like this, the aid a man receives from understanding helpmates within his own home.

I have to thank you, Sir, and all gathered on this occasion for the many kind things you have said of me, and the much friendly assistance you are giving me for the short road I have still to travel. "I regret you have been retreated", a Russian friend wrote to me, but I must reply that I have only retreated for strategic purposes. My retreat for six months has been in hospitable quarters most kindly provided for me by "my Colleague Watson". I have had what I have not had for fifty years at least—*time to think*. It is a laborious task to think after you have given it up for fifty years and have restarted at seventy-seven! Still, as long as I have physique to climb the stairs and psychique to think, you will always find me haunting University College.

If I have detained you too long, pray pardon the garrulity of the aged. And if I have not said the right things in return for all your kindness, you will realise that it is not always possible to give utterance to what one does in truth feel most deeply.

## UCL Legacies of Eugenics Project

Filon, Louis Napoleon George, George Udny Yule, Harald Westergaard, Major Greenwood, and Karl Pearson. 1934. *Speeches Delivered at a Dinner Held in University College, London in Honour of Professor Karl Pearson 23 April 1934* (Privately Printed at the University Press Cambridge).

Includes (1) photograph of Karl Pearson with Brunsviga calculating machine, (2) address by Professor L. N. G. Filon, Vice-Chancellor, University of London, pp. 5-9, (3) additional comments from Mr G Udny Yule, pp. 10-14, Professor Harald Westergaard, pp. 15-16, Professor M. Greenwood, pp. 17-18, and (4) Reply from Professor Karl Pearson, pp. 19-24.

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